LABORATORY BULLETIN

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES, HELENA, MONTANA

No. 63 Editor : David B. Lackman, Ph.D., Administrator, Laboratory Division
July 1, 1976

NATIONAL PROFICIENCY EXAMINATIONS FOR QUALIFICATION AS A CLINICAL LABORATORY TECHNOLOGIST

Deadline date for receipt of application for admission to the examination : July 21, 1976

Request application forms from your State Agency - for Montana :
David B. Lackman, Administrator, Laboratory Division
Department of Health and Environmental Sciences
W. F. Cogswell Building, Helena, Montana 59601

Applications are to be returned to the same address.

As announced in Bulletin No. 62, the examination will be held on October 8, 1976 in Room 142, W. F. Cogswell Building (Laboratory), S.E. Corner of Lockey and Roberts, Helena; starting at 9:00 A.M.

BACTERIOLOGY

Botulism emergencies : (Updating of bulletin No. 40) When botulism is suspected, Martin D. Skinner, M.D., Chief of the Preventive Health Services Bureau, should be notified. (Office phone number : 449-2645; home 443-5349) If he can't be reached, call John S. Anderson, M.D., Administrator of the Health Services Division. (Telephones : Office 449-2554; home 442-0663) You should also notify your local sanitarian so investigation of food may be started. Antitoxin is manufactured by Lederle Laboratories. Their representative for this area is : Ronald P. Tihista, 3115 - 4th Avenue North, Great Falls 59401 - telephone 452-8826. A supply of antitoxin is maintained at the Center for Disease Control, Rare Drug Supply - telephones, Monday through Friday (404) 633-3311, extensions 3753 or 3756; all other times (404) 633-2176 or 8673. As soon as possible, but always before antitoxin is given, 30 ml. of blood should be obtained in large vacutainer tubes and sent, without separation of the serum, to Dr. Vulus R. Dowell, Jr., Anaerobic Bacteriology, Bureau of Laboratories, Center for Disease Control, Atlanta, GA 30333. Samples of suspected foods will be taken care of by the sanitarian.

Restriction of Services : Daily, this is becoming more of a problem. To avoid repetition, I refer you to page 2 of Bulletin 62. We receive many specimens which should have been sent to the laboratory of your consulting pathologist instead of to the state laboratory. The days have passed when specimens were sent to the state laboratory simply because the service was "free". One of the purposes of our continuing education and proficiency testing programs in bacteriology is to enable technologists in local laboratories to more adequately provide clinical bacteriology services. To do justice to our present work load, we need another clinical bacteriologist. However, we are under strict orders not to create new positions in state government. Therefore, we have reached a point where we must re-evaluate our activities. We realize there are problems peculiar to this state; but it is also

obvious that we can't be "all things to all men". Priority must be given to laboratory tests that are truly supportive of public health and preventive medicine; and leave those primarily concerned with therapeutic medicine to the private sector. Here are some of our priorities : chemical and microbiological tests in the realm of environmental sciences (air, water, food and consumer safety, occupational health); preventive medicine (infant screening, tests to determine immunity to certain diseases, toxicology - especially tests in support of efforts to remove unsafe operators of motor vehicles from highways, tests requested by our epidemiologists in connection with efforts to control communicable diseases); continuing education; consultation and external quality control.

I am not satisfied with some of the requests received for determinative bacteriology. However, this problem is not peculiar to Montana. Here is a bit of enlightenment from Ohio : "Cultures of questionable health significance will not be accepted unless evidence is provided relating such cultures to a human health problem." Larger hospital laboratories under direction of pathologists have been good about referring to us only those cultures for which there is ample justification. Often cultures from other suppliers haven't been adequately screened as to their clinical significance.

The "Manual of Tests for Syphilis" - 1969 Edition is no longer available. Revision is under way at the Center for Disease Control.

VIROLOGY

Influenza : Currently the laboratory is involved in surveillance. Each Monday throat swabs will be taken from selected febrile (102°F) cases of respiratory disease to be inoculated into embryonated eggs for viral culturing. Purpose is to detect, as early as possible, the appearance in Montana of the next "epidemic" strain of influenza virus. Presently there are epidemics of influenza, due to A / Victoria / 3 / 75, in the southern hemisphere (Santiago, Chile; French Guiana; Martinique; Argentina and Singapore). When "Asian" influenza appeared in 1957, it reached Montana the last week of August; and the epidemic "peaked" during the second week of October. However, this "mutant" was first detected in Central China in February, 1957. If history repeats, we should have ample warning when a new influenza virus is on its way.

The last outbreak of Group B influenza in Montana (B/Hong Kong) occurred the early part of 1974. Therefore, we should be due for some Group B influenza early in 1977. The last outbreak was noted for cases of Reye's syndrome associated with influenza B.

Recent statements on TV, attributed to Dr. Salk, compare the impending influenza vaccination program with those conducted in the past for poliomyelitis. There is the implication that mankind could be rid of influenza through vaccination much as paralytic polio has been conquered. This comparison is rather far-fetched. Influenza virus, in contrast to poliovirus, is continually undergoing antigenic change; so I doubt whether we will ever be able to "eliminate" influenza as a scourge of mankind soely by vaccination. I have intense recollections of the winter of 1918-19 in Connecticut. Schools, churches, and other places of assemblage were closed; and quite a bit of attention was paid to "air hygiene". This probably contributed greatly to the eventual control of the influenza epidemic. I know that strict regional quarantine measures were successful in Alaska (Philip, R.N., and Lackman, D.B. Observations on the present distribution of influenza A/Swine antibodies among

Alaskan natives relative to the occurrence of Influenza in 1918-1919. Am. J. Hyg. 75: 322-334, May 1962). In my opinion, more attention should be paid to air hygiene and to contamination of air because of poor personal habits.

Infectious mononucleosis - ox-cell hemolysin test : As anticipated in previous bulletins, this test is no longer being offered in the state laboratory. For a discussion of kit tests for use in the clinical laboratory see : Taylor, R.N., Ehrhard, H-B, and Marcus, S. "Evaluation of Tests for Infectious Mononucleosis through Proficiency Testing" Health Laboratory Science 13 :34-44, January, 1976.

Isolation of viruses : We haven't been able to offer this for viruses requiring a haploid human-cell culture for growth. Recently I received a booklet entitled : Mayo Medical Laboratories, Effective January , 1976. Among other things, it contained a listing "Viral Isolation". This service is offered for a fee of $11.90 and includes inoculation of a minimum of three tissue-culture systems with maximum "turn-around" time in the laboratory of 14 days. We can't match this; our average per-specimen cost for virus isolation is $25.40. On pp 70-73 of this catalogue there is a description of the service with a listing of viruses; some of which can't be grown in the tissue-culture systems we are able to afford. I suggest that physicians and pathologists would do well to have this booklet at hand as a reference. It may be obtained from :

Michael B. O'Sullivan, M.D., Director
Mayo Medical Laboratories
200 First Street, Southwest
Rochester, Minn. 55901

In an accompanying letter, there is this introduction : "Through Mayo Medical Laboratories, Mayo Clinic makes the service of its various laboratories available to requesting physicians from throughout the United States and abroad. The program is part of Mayo's outreach efforts which are dedicated to medical care, services and education well beyond Rochester." During the many years of my involvement with research on laboratory aids in the diagnosis of infectious disease, I have had occasions to seek advice and reference tests from the physician-scientists at the Mayo Clinic. This has been a two-way operation, but they have never failed me. I hope that this new service will be a means of compensating for the unavoidable deficiencies in what we can offer out of our one-man virology laboratory.

INCREASE IN COST OF OPERATING THE LABORATORY

Because of increases in salaries and cost of supplies occurring since June 17, 1975, when the last calculation was made, it has been necessary to recalculate the hourly "shop" cost for personnel. For the Microbiology Laboratory it is $11.22 per hour (previous figure was $10.87); and for the Chemistry Laboratory it is $12.00 per hour. In microbiology the figure is made up of the following :

$0.85 uniform handling fee for all specimens coming to the laboratory - includes postage, containers, clerical service, overhead for office.
$6.50 average hourly wage
$0.98 employee benefits (social security, public employees retirement, unemployment, medical and industrial accident)
$3.74 hourly cost, per employee, of operating the laboratory.

We also have some new "time-equivalents". For culture for N. gonorrhoeae - 15 minutes; based on 10,000 specimens per year. For VDRL serologic test for syphilis - 5.4 minutes; based on runs of at least 200 specimens. For Rubella hemagglutination-inhibition (microtiter) - 7.2 minutes; based on runs of at least 300 specimens once a week.

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